



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

July 9, 2003

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

RE: **Essex Group, Inc. 183-14400-00016**

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within (18) eighteen days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) the date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for consideration at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosure

FNPER.wpd 8/21/02



Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

**PREVENTION OF
SIGNIFICANT DETERIORATION (PSD) AND PART 70
SIGNIFICANT SOURCE MODIFICATION
OFFICE OF AIR QUALITY**

**Essex Group Inc., Metals Processing Center
2601 South 600 East
Columbia City, Indiana 46725**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit is also issued under the provisions of 326 IAC 2-2 (Prevention of Significant Deterioration), with conditions listed on the attached pages.

PSD Source Modification No.: 183-14400-00016	
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: July 9, 2003

TABLE OF CONTENTS

SECTION A SOURCE SUMMARY

- A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]
- A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]
- A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]
[326 IAC 2-7-5(15)]
- A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

SECTION B GENERAL CONSTRUCTION CONDITIONS

- B.1 Definitions [326 IAC 2-7-1]
- B.2 Effective Date of the Permit [IC 13-15-5-3]
- B.3 Significant Source Modification [326 IAC 2-7-10.5(h)]

SECTION C GENERAL OPERATION CONDITIONS

- C.1 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]
- C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)]
[326 IAC 1-6-3]
- C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]
- C.4 Opacity [326 IAC 5-1]
- C.5 Operation of Equipment [326 IAC 2-7-6(6)]
- C.6 Stack Height [326 IAC 1-7]

Testing Requirements [326 IAC 2-7-6(1)]

- C.7 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

Compliance Requirements [326 IAC 2-1.1-11]

- C.8 Compliance Requirements [326 IAC 2-1.1-11]

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

- C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]
- C.10 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]
- C.11 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11]
[326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

- C.12 Compliance Response Plan - Preparation, Implementation, Records, and Reports
[326 IAC 2-7-5] [326 IAC 2-7-6]
- C.13 Emergency Provisions [326 IAC 2-7-16]
- C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]
[326 IAC 2-7-6]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- C.15 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]
- C.16 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

SECTION D.1 FACILITY CONDITIONS

Emission Limitations and Standards [326 IAC 2-7-5(1)]

- D.1.1 Best Available Control Technology (BACT) for VOC [326 IAC 2-2-3] [326 IAC 8-1-6]
- D.1.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

Compliance Determination Requirements

- D.1.3 Volatile Organic Compound (VOC)
- D.1.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

TABLE OF CONTENTS (Continued)

- D.1.5 Thermal Oxidizer Temperature
- D.1.6 Parametric Monitoring

Record Keeping and Reporting [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- D.1.7 Record Keeping Requirements

SECTION D.2 FACILITY OPERATION CONDITIONS

Emission Limitations and Standards [326 IAC 2-7-5(1)]

- D.2.1 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]
- D.2.2 40 CFR Part 60, Subpart Kb (Volatile Organic Storage Vessels)

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- D.2.3 Record Keeping Requirements

Certification
Quarterly Report
Affidavit

SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in Conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a copper processing facility.

Responsible Official:	Director of Operations, Metals Processing
Source Address:	2601 South 600 East, Columbia City, IN 46725
Mailing Address:	2601 South 600 East, Columbia City, IN 46725
Source Phone Number:	(260) 248-5553
SIC Code:	3351 and 3357
County Location:	Whitley
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD; Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

055 West Alcohol Quench Process

- (a) One (1) Mill Emulsion System, identified as 055 West Line Mill Emulsion System (P-5), constructed in 1985, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.
- (b) One (1) Alcohol Quench System, identified as 055 West Line Quench System (P-5), constructed in 1985, which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.

The maximum capacity of the 055 West Line (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-Propanol (IPA) per hour.

055 East Alcohol Quench Process

- (c) One (1) Mill Emulsion System, identified as 055 East Line Mill Emulsion System (P-6), constructed in 1994, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.
- (d) One (1) Alcohol Quench System, identified as 055 East Line Quench System (P-6), constructed in 1994, which pumps a quench solution containing 0.8% - 3.0% by volume

IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.

The maximum capacity of the 055 East Line (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-Propanol (IPA) per hour.

Storage Tanks

- (e) Two (2) 17,000 gallon mill emulsion storage tanks, constructed in 1985 and 1994, respectively, and emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to stack S-10.
- (f) Two (2) 7,500 gallon quench solution storage tanks, constructed in 1985 and 1994, respectively, and emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to stack S-10.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source has not requested to construct or modify any insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21).

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

B.1 Definitions [326 IAC 2-7-1]

B.2 Effective Date of the Permit [IC 13-15-5-3]

B.3 Significant Source Modification [326 IAC 2-7-10.5(h)]

(3) If the Part 70 permit has gone through public notice, but has not gone through final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Part 70 permit, and the Title V permit will issued after EPA review.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) once operation begins, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality

100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

- (a) Compliance testing on emission units shall be conducted as specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.10 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.11 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) Whenever a condition in this permit requires the measurement of a temperature, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (b) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.12 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared prior to operation by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
 - (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.

- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall constitute a violation of the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.13 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or

Telephone Number: 317-233-5674 (ask for Compliance Section)

Facsimile Number: 317-233-5967

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

- (e) IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(9) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
- (h) Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

**C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]
[326 IAC 2-7-6]**

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.15 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

- (a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.16 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1

FACILITY CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Alcohol Quench and Emulsion Processes

- (a) One (1) Mill Emulsion System, identified as 055 West Line Mill Emulsion System (P-5), constructed in 1985, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.
- (b) One (1) Alcohol Quench System, identified as 055 West Line Quench System (P-5), constructed in 1985, which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.

The maximum capacity of the 055 West Line (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-Propanol (IPA) per hour.

- (c) One (1) Mill Emulsion System, identified as 055 East Line Mill Emulsion System (P-6), constructed in 1994, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.
- (d) One (1) Alcohol Quench System, identified as 055 East Line Quench System (P-6), constructed in 1994, which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.

The maximum capacity of the 055 East Line (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-Propanol (IPA) per hour.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Best Available Control Technology (BACT) for VOC [326 IAC 2-2-3] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration) and 326 IAC 8-1-6 (BACT), the Permittee shall comply with the following BACT requirements:

- (a) The average VOC (2-Propanol) input to the 055 East and 055 West Alcohol Quench Systems (P-5 and P-6) and 055 East and 055 West Mill Emulsion Systems (P-5 and P-6) shall not exceed 300 pounds per hour per system. Compliance will be determined each calendar month by totaling the VOC input to the system for the calendar month and dividing by the total operating hours for the calendar month.
- (b) The recuperative thermal oxidizer, identified as CE-03, shall control VOC emissions from the 055 East and 055 West Alcohol Quench Systems and Mill Emulsion Systems (P-5 and P-6) and achieve a minimum one-hundred percent (100%) capture efficiency and ninety-eight percent (98%) destruction efficiency.

Compliance with these requirements will satisfy the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 8-1-6 (BACT).

D.1.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for these facilities and the recuperative thermal oxidizer.

Compliance Determination Requirements

D.1.3 Volatile Organic Compound (VOC)

In order to demonstrate compliance with Condition D.1.1, the recuperative thermal oxidizer (CE-03) shall:

- (a) Operate at all times when the 055 East and 055 West Alcohol Quench Systems (P-5 and P-6) and 055 East and 055 West Mill Emulsion Systems (P-5 and P-6) are in operation.
- (b) Maintain a minimum ninety-eight percent (98%) destruction efficiency and one-hundred percent (100%) capture efficiency.

D.1.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Between January 1, 2004 and July 31, 2004, the Permittee shall conduct a performance test to determine compliance with Condition D.1.1 for the recuperative thermal oxidizer using methods as approved by the Commissioner. This test shall be repeated at least once every two and one-half (2.5) years from the date of the most recent valid compliance demonstration.

D.1.5 Thermal Oxidizer Temperature

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature of the recuperative thermal oxidizer. For the purposes of this condition, continuous monitoring shall mean no less often than once per minute. The output of this system shall be recorded as an hourly average. If the continuous monitoring system is not in operation, the temperature will be recorded manually once in a 15-minute period. Nothing in this permit shall excuse the Permittee from complying with the requirement to continuously monitor the temperature of the recuperative thermal oxidizer.
- (b) From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the hourly average temperature of 1456°F. The Permittee shall determine the minimum hourly average temperature from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.1, as approved by IDEM.
- (c) The Permittee shall then operate the thermal oxidizer at or above the minimum hourly average temperature as observed during the most recent compliant stack test following approval of that temperature.

D.1.6 Parametric Monitoring

- (a) The Permittee shall determine the appropriate fan amperage from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.1 as approved by IDEM.
- (b) The Permittee shall observe the fan amperage at least once per day when the thermal oxidizer is in operation. The oxidizer fan amperage shall be maintained within the normal range of 206 to 213 amps or as established in the most recent compliant stack test.

Record Keeping and Reporting [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.7 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1, the Permittee shall maintain monthly purchase records of the VOC input to, and operating hours of, the 055 West and 055 East Alcohol Quench Systems (P-5 and P-6) and the 055 West and 055 East Mill Emulsion Systems (P-5 and P-6).

- (b) To document compliance with Condition D.1.5, the Permittee shall maintain records of:
 - (1) The continuous temperature records (reduced to 1-hour block averages) for the thermal oxidizer and the hourly average temperature used to demonstrate compliance during the most recent compliant stack test.
 - (2) The daily records of the fan amperage.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Storage Tanks

- (e) Two (2) 17,000 gallon mill emulsion storage tanks, constructed in 1985 and 1994, respectively, and emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to stack S-10.
- (f) Two (2) 7,500 gallon quench solution storage tanks, constructed in 1985 and 1994, respectively, and emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to stack S-10.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

The two (2) 17,000 gallon mill emulsion storage tanks and two (2) 7,500 gallon quench solution storage tanks are an indivisible part of the 055 West and 055 East Alcohol Quench Systems (P-5 and P-6) and 055 West and 055 East Mill Emulsion Systems (P-5 and P-6). VOC emissions from these tanks have been accounted for in the review of the 055 West and 055 East Alcohol Quench Systems (P-5 and P-6) and 055 West and 055 East Mill Emulsion Systems (P-5 and P-6). As a result, compliance with the BACT requirements established in section D.1 will serve as BACT for the two (2) 17,000 gallon mill emulsion storage tanks and two (2) 7,500 gallon quench solution storage tanks.

D.2.2 40 CFR Part 60, Subpart Kb (Volatile Organic Storage Vessels)

- (a) The two (2) 17,000 gallon mill emulsion storage tanks are subject to 40 CFR Part 60, Subpart Kb because the maximum capacity of each tank is greater than 40 m³ that is used to store volatile organic liquids for which construction, reconstruction, or modification commenced after July 23, 1984. Pursuant to this rule, the permittee must maintain records as required by 40 CFR 60.116(a) and 60.116(b).
- (b) All tanks are exempt from the General Provisions (Part 60, subpart A) and from the provisions of subpart Kb, except as specified in 40 CFR 60.116(a) and 60.116(b), because the tanks have a capacity less than 75 m³ storing liquid.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.3 Record Keeping Requirements

To document compliance with Condition D.2.2, the Permittee shall keep readily accessible records showing the dimension of the storage tanks and an analysis showing the capacity of the storage tanks.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

**PART 70 SOURCE MODIFICATION
CERTIFICATION**

Source Name: Essex Group Inc., Metals Processing Center
Source Address: 2601 South 600 East, Columbia City, Indiana 46725
Mailing Address: : 2601 South 600 East, Columbia City, Indiana 46725
Source Modification No.:183-14400-00016

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

- 9 Test Result (specify) _____
- 9 Report (specify) _____
- 9 Notification (specify) _____
- 9 Affidavit (specify) _____
- 9 Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature: _____

Printed Name: _____

Title/Position: _____

Date: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

Part 70 Quarterly Report

Source Name: Essex Group Inc., Metals Processing Center
Source Address: 2601 South 600 East, Columbia City, Indiana 46725
Mailing Address: : 2601 South 600 East, Columbia City, Indiana 46725
Source Modification No.: 183-14400-00016
Facility: 055 East Alcohol Quench System and Mill Emulsion System; 055 West Alcohol Quench System and Mill Emulsion System
Parameter: VOC
Limit: 300 pounds per hour per process

Note that a separate report must be completed for the 055 East and 055 West systems.

YEAR: _____

Month	Column 1: VOC input (lb/month)	Column 2: Operating hours (hr/month)	Column 1/ Column 2: average VOC input (lb/hr)
Month 1:			
Month 2:			
Month 3:			

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

Mail to: Permit Administration & Development Section
Office Of Air Quality
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

Essex Group Inc., Metals Processing Center
2601 South 600 East
Columbia City, Indiana 46725

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____.
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make
these representations on behalf of _____.
(Company Name)
4. I hereby certify that Essex Group, Inc., 2601 South 600 East, Columbia City, IN 46725 has constructed the recuperative thermal oxidizer, 055 West Line Emulsion System , 055 East Line Emulsion System , 055 West Line Quench System, 055 East Line Quench System, and storage tanks in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality and as permitted pursuant to Source Modification No. 183-14400-00016 issued on _____.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature

Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of
Indiana on this _____ day of _____, 20 _____.

My Commission expires: _____

Signature

Name (typed or printed)

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document for a PSD Significant Source Modification to a Part 70 Operating Permit

Source Background and Description

Source Name:	Essex Group, Inc.; Metals Processing Center
Source Location:	2601 South 600 East, Columbia City, IN 46725
County:	Whitley
SIC Code:	3351 and 3357
Operation Permit No.:	T183-6488-00016
Operation Permit Issuance Date:	pending
Significant Source Modification No.:	183-14400-00016
Permit Reviewer:	ERG/BS

On April 25, 2003, the Office of Air Quality (OAQ) had a notice published at the Peabody Public Library, 1160 East Highway 205, Columbia City, IN 46725 and in the Post & Mail newspaper of Columbia City stating that Essex Group, Inc. had applied for a Prevention of Significant Deterioration (PSD) and Part 70 Significant Source Modification for the operation of two Alcohol Quench Processes, ancillary storage tanks, and a Recuperative Thermal Oxidizer controlling VOC emissions from the Alcohol Quench Processes. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On May 23, 2003, Essex Group, Inc. submitted comments on the proposed Significant Source Modification. The following is a summary of the comments and responses to those comments. The Table Of Contents has been modified, if applicable, to reflect any changes.

Comment 1:

The last sentence of Condition B.3(a) should be deleted. The emissions units covered by this source modification are already operating and are in compliance with the emission control conditions of the modification. Essex has installed, and is operating, the BACT RTO in an effort to resolve the NOV referenced in the Technical Support Document (TSD).

Response to Comment 1:

The following changes have been made to the permit in response to Comment 1:

B.3 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as indicated in the application. ~~The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of~~

~~construction is postmarked or hand delivered to IDEM if constructed as proposed.~~

Comment 2:

As indicated by Condition D.2.2(a), the provisions of 40 CFR Part 60 Subpart A are not applicable to any facilities covered in this source modification. As a result, Condition B.4 should be removed from the permit.

Response to Comment 2:

The following changes have been made to the permit in response to Comment 2:

~~B.4 NSPS Reporting Requirement [40 CFR Part 60 Subpart Kb]~~

~~Pursuant to the New Source Performance Standards (NSPS), Part 60, Subpart Kb, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:~~

- ~~(a) Commencement of construction date (no later than 30 days after such date);~~
- ~~(b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);~~
- ~~(c) Actual start-up date (within 15 days after such date); and~~
- ~~(d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.~~

~~Reports are to be sent to:~~

~~Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015~~

~~The application and enforcement of these standards have been delegated to the IDEM, OAQ.
The requirements of 40 CFR Part 60 are also federally enforceable.~~

Comment 3:

Please change the name of the source from Metal Processing Center to Metals Processing Center.

Response to Comment 3:

All references in the permit to "Metal Processing Center" have been changed to "Metals Processing Center."

Comment 4:

Please revise Condition C.7(a) so that it is consistent with Condition D.1.4.

Response to Comment 4:

The following changes have been made to clarify that the time frame for compliance testing is specified in Condition D.1.4:

C.7 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

- (a) Compliance testing on new emission units shall be conducted ~~within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if as~~ specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

Comment 5:

The SIP provisions cited in Condition C.12 (Compliance Response Plan - Preparation, Implementation, Records, and Reports) do not require a Compliance Response Plan (CRP). Condition C.12 is therefore contrary to law. There are sufficient monitoring, maintenance and inspection requirements in the permit to ensure compliance. Further, the CRP requirement is vague and undefined because it does not spell out what "reasonable response steps" are. As written, the condition requires continuous revision of the response plan without any limits on IDEM's discretion to determine what steps are reasonably necessary. Therefore, the condition is not susceptible of compliance. Essex believes that the Preventive Maintenance Plan (PMP), along with the various monitoring and reporting requirements in the permit, provide sufficient safeguards against non-compliance. As a result, Condition C.12 (Compliance Response Plan - Preparation, Implementation, Records, and Reports) should be removed from the permit.

Response to Comment 5:

IDEM has worked with members of the Clean Air Act Advisory Council's Permit Committee, Indiana Manufacturing Association, Indiana Chamber of Commerce and individual applicants regarding the Preventive Maintenance Plan, the Compliance Monitoring Plan and the Compliance Response Plan. IDEM has clarified the preventive maintenance requirements by working with sources on draft language over the past three years. The plans are fully supported by rules promulgated by the Air Pollution Control Board. The plans are the mechanism each permittee will use to verify continuous compliance with its permit and the applicable rules and will form the basis for each permittee's Annual Compliance Certification. Each permittee's ability to verify continuous compliance with its air pollution control requirements is a central goal of the Title V and FESOP permit programs.

The regulatory authority for and the essential elements of a compliance monitoring plan were clarified in IDEM's Compliance Monitoring Guidance, in May 1996. IDEM originally placed all the preventive maintenance requirements in the permit section titled "Preventive Maintenance Plan." The Preventive Maintenance Plan (PMP) had to set out requirements for the inspection and maintenance of equipment both on a routine basis and in response to monitoring. Routine maintenance was a set schedule of inspections and maintenance of the equipment. Response maintenance included inspection and maintenance in response to monitoring that showed that the equipment was not operating in its normal range. This monitoring would indicate that maintenance was required to prevent the exceedance of an emission limit or other permit requirement. The maintenance plan was to set out the "corrective actions" that the permittee

would take in the event an inspection indicated an "out of specification situation", and set the time frame for taking the corrective action. In addition, the PMP had to include a schedule for devising additional corrective actions for situations that the source had not predicted in the PMP. All these plans, actions and schedules were part of the Preventive Maintenance Plan, with the purpose of maintaining the equipment to prevent an exceedance of an emission limit or violation of other permit requirements.

After issuing the first draft Title V permits in July of 1997, IDEM received comments from members of the regulated community regarding many of the draft permit terms, including the PMP requirements. One suggestion was to remove the corrective action and related schedule requirements from the PMP requirement and placed them into some other requirement. This suggestion was based, in some part, on the desire that a permittee's maintenance staff handle the routine maintenance of the equipment, and a permittee's environmental compliance and engineering staff handle the compliance monitoring.

IDEM agreed to separate the "corrective actions" and related schedule requirements from the PMP. These requirements were placed into a separate requirement named the Compliance Response Plan (CRP). In response to another comment, IDEM changed the name of the "corrective actions" to "response steps."

The CRP response steps and schedule requirements are examples of documenting procedures developed from good business practices and the prevention of environmental problems. Permittees already have maintenance schedules and trouble shooting guides that specify the steps to take when the equipment is not functioning correctly. The steps may involve some initial checking of the system to locate the exact cause, and other steps to place the system back into proper working order. Using the trouble shooting guide and the permittee's own experience with the equipment, the steps are taken in order and as scheduled until the problem is fixed.

No changes have been made to the permit as a result of this comment.

Comment 6:

The facility descriptions in Section D.1 (and A.1) should be revised to clarify that the maximum capacity of each 055 Line (P-5 and P-6) is 300 pounds of IPA per hour as indicated in Condition D.1.1(a).

Response to Comment 6:

The following changes have been made to Section A.1 and D.1 in response to Comment 6:

055 West Alcohol Quench Process

- (a) One (1) Mill Emulsion System, identified as 055 West Line Mill Emulsion System (P-5), constructed in 1985, ~~a maximum capacity of 300 pounds 2-Propanol (IPA) per hour,~~ which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.
- (b) One (1) Alcohol Quench System, identified as 055 West Line Quench System (P-5), constructed in 1985, ~~a maximum capacity of 300 pounds 2-Propanol (IPA) per hour,~~

which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.

The maximum capacity of the 055 West Line (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-Propanol (IPA) per hour.

055 East Alcohol Quench Process

- (c) One (1) Mill Emulsion System, identified as 055 East Line Mill Emulsion System (P-6), constructed in 1994, ~~a maximum capacity of 300 pounds 2-Propanol (IPA) per hour~~, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.
- (d) One (1) Alcohol Quench System, identified as 055 East Line Quench System (P-6), constructed in 1994, ~~a maximum capacity of 300 pounds 2-Propanol (IPA) per hour~~, which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.

The maximum capacity of the 055 East Line (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-Propanol (IPA) per hour.

Comment 7:

Condition D.1.1(b) states that the recuperative thermal oxidizer (RTO) must achieve a minimum one-hundred percent (100%) capture efficiency and ninety-eight percent (98%) destruction efficiency. The BACT analysis that Essex submitted to IDEM indicated that BACT should be an RTO operating at a minimum 95% destruction efficiency. IDEM has proposed that BACT for this source is an RTO operating at a minimum 98% destruction efficiency; and that determination is based upon the use of a RTO at a company named Flowmatrix in California. However, a detailed review of the RACT-BACT-LAER Clearinghouse (RBLC) indicates that the Flowmatrix RTO has never been compliance verified. Essex has also discovered that the Flowmatrix source is no longer operating. Furthermore, it turns out that the Flowmatrix RTO is not an example of BACT, but rather an example of LAER. According to representatives of the Santa Barbara County Air Pollution Control District, Flowmatrix was in a non-attainment area for ozone and therefore had to implement the more stringent LAER standard. Because the Columbia City Metal Processing Center is located in an attainment area for ozone, BACT, not LAER, must be implemented. As a result, the BACT analysis and appropriate D.1 conditions should be changed to indicate that the RTO must achieve a minimum 95% destruction efficiency.

Response to Comment 7:

The BACT determination (minimum 98% control efficiency) for Essex is not solely based on the LAER determination at the Flowmatrix source. As indicated on page 4 of Appendix B, the 98% destruction efficiency requirement was based on the results of the stack tests completed by Essex on January 25, 2002. The stack test results indicated that an overall efficiency of 99.84% was achieved. The reference to the LAER determination for the Flowmatrix source simply supports IDEM's conclusion. In addition, the fact that the requirement for Flowmatrix was LAER, and not BACT, does not preclude Flowmatrix's determination from being considered when

evaluating BACT for Essex. The principal difference between BACT and LAER is that BACT must consider the cost of the determination. Essex has not provided any information that illustrates that 98% is not economically feasible. As a result, the OAQ has determined that 98% destruction efficiency is both technically and economically feasible and is therefore BACT for Essex.

No changes have been made to the permit as a result of this comment.

Comment 8:

Condition D.1.2 should be corrected to indicate that a Preventive Maintenance Plan is only required for the recuperative thermal oxidizer.

Response to Comment 8:

The Preventive Maintenance Plan requirement incorporated as Condition D.1.2 must be included in every Part 70 permit pursuant to 326 IAC 2-7-5(13). This rule refers back to the Preventive Maintenance Plan requirement as described in 326 IAC 1-6-3. It is clear from the structure of the wording in 326 IAC 1-6-3 that the PMP requirement affects the entirety of the applicable facilities, not just the control device. Only 326 IAC 1-6-3(a)(1) is specific to the control device; in that it requires identification of the personnel in charge of only the emission control equipment. The commissioner may require changes in the maintenance plan to reduce excessive malfunctions in any control device or process equipment under 326 IAC 1-6-5.

No changes have been made to the permit as a result of this comment.

Comment 9:

Condition D.1.4 indicates that compliance testing is required every 2.5 years. Essex proposes that IDEM change the frequency of the required compliance testing to every 3 years instead of every 2.5 years.

Response to Comment 9:

The 2.5 year testing requirement is consistent with IDEM guidance and precedence. Essex has not provided any reasoning that justifies the lessening of the requirement.

No changes have been made to the permit as a result of this comment.

Comment 10:

Condition D.1.5(a) should be revised to clarify that, after the next stack test, a new operating temperature for the RTO may be established and will become the new permit condition. Condition D.1.5 should state that the permit will be revised if a different operating temperature is proven to be sufficient.

Response to Comment 10:

The following changes have been made to the permit in response to Comment 10:

D.1.5 Thermal Oxidizer Temperature

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature of the recuperative thermal oxidizer. For the purposes of this condition, continuous monitoring shall mean no less often than once per minute. The output of this system shall be recorded as an hourly average. ~~From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the hourly average temperature of 1456°F.~~ If the continuous monitoring system is not in operation, the temperature will be recorded manually once in a 15-minute period. Nothing in this permit shall excuse the Permittee from complying with the requirement to continuously monitor the temperature of the recuperative thermal oxidizer.
- (b) **From the date of issuance of this permit until approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the hourly average temperature of 1456°F.** The Permittee shall determine the minimum hourly average temperature from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.1, as approved by IDEM.
- (c) The Permittee shall **then** operate the thermal oxidizer at or above the minimum hourly average temperature as observed during the **most recent** compliant stack test **following approval of that temperature.**

Comment 11:

Condition D.1.7(b) should be revised to reference Condition D.1.5.

Response to Comment 11:

The following changes have been made to the permit in response to Comment 11:

D.1.7 Record Keeping Requirements

- (b) To document compliance with Condition ~~D.1.6~~ **D.1.5**, the Permittee shall maintain records of:
 - (1) The continuous temperature records (reduced to 1-hour block averages) for the thermal oxidizer and the hourly average temperature used to demonstrate compliance during the most recent compliant stack test.
 - (2) The daily records of the fan amperage.

Comment 12:

Pertaining to the TSD and its appendices:

- (a) Essex respectfully disagrees with the allegations of noncompliance listed in the TSD and reserves its rights to assert any defenses it may have in an appropriate forum. This permit does not constitute a waiver of such defenses.
- (b) Please make the necessary changes to the TSD to indicate that BACT for the Alcohol

Quench Processes is the operation of an RTO that achieves a minimum 95% destruction efficiency. Please refer to Comment 7.

- (c) Note that VOC testing was not “done at the direction of IDEM’s Office of Enforcement” as indicated on page 8 of the TSD. IDEM’s Office of Air Quality directed the testing. A representative of the Office of Enforcement was present during testing.
- (d) In Appendix C, strike the word “to” in the sentence ending “2-propanol used to in the mill emulsion and quenching system.”

Response to Comment 12:

The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support document and its appendices that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

AS a result, IDEM acknowledges that: 1) VOC testing of the aforementioned Alcohol Quench Processes was not done at the direction of IDEM; instead, IDEM was present during testing; and 2) 2-propanol is used in the mill emulsion system.

No changes have been made to the permit as a result of this comment.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Prevention of Significant Deterioration (PSD) and Part 70 Significant Source Modification

Source Background and Description

Source Name:	Essex Group, Inc.; Metals Processing Center
Source Location:	2601 South 600 East, Columbia City, IN 46725
County:	Whitley
SIC Code:	3351 and 3357
Operation Permit No.:	T183-6488-00016
Operation Permit Issuance Date:	not yet issued
Significant Source Modification No.:	183-14400-00016
Permit Reviewer:	ERG/BS

The Office of Air Quality (OAQ) has reviewed a modification application from Essex Group, Inc. relating to the construction and modification of the following emission units and pollution control devices:

Unpermitted Emission Units and Pollution Control Equipment

055 West Alcohol Quench Process

- (a) One (1) Mill Emulsion System, identified as 055 West Line Mill Emulsion System (P-5), constructed in 1985, a maximum capacity of 300 pounds 2-Propanol (IPA) per hour, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.
- (b) One (1) Alcohol Quench System, identified as 055 West Line Quench System (P-5), constructed in 1985, a maximum capacity of 300 pounds 2-Propanol (IPA) per hour, which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.

055 East Alcohol Quench Process

- (c) One (1) Mill Emulsion System, identified as 055 East Line Mill Emulsion System (P-6), constructed in 1994, a maximum capacity of 300 pounds 2-Propanol (IPA) per hour, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.
- (d) One (1) Alcohol Quench System, identified as 055 East Line Quench System (P-6), constructed in 1994, a maximum capacity of 300 pounds 2-Propanol (IPA) per hour, which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.

Storage Tanks

- (e) Two (2) 17,000 gallon mill emulsion storage tanks, constructed in 1985 and 1994, respectively, and emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to stack S-10.
- (f) Two (2) 7,500 gallon quench solution storage tanks, constructed in 1985 and 1994, respectively, and emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to stack S-10.

Note that a single recuperative thermal oxidizer, identified as CE-03, constructed in 2001, exhausting to stack S-10, controls emissions from both the 055 West and 055 East Alcohol Quench Processes and the storage tanks.

History

On August 30, 1996, Essex Group, Inc. submitted an application to the OAQ requesting a Part 70 permit for its Columbia City Metal Processing Center. Upon review, OAQ determined that the construction and operation of the 055 West and 055 East Alcohol Quench Processes (AQP), and ancillary storage tanks were constructed and operated without the receipt of a permit. The review also discovered that the 055 West and 055 East AQPs became subject to 326 IAC 2-2 (Prevention of Significant Deterioration) upon installation in 1985 and 1994, respectively. In order to satisfy the PSD requirement, on May 15, 2001, the source conducted a BACT analysis, Ambient Ozone Impact Analysis, and submitted an application to permit the construction of all three Alcohol Quench Processes and a new BACT control device. The results of a BACT analysis determined that the use of a Recuperative Thermal Oxidizer (RTO) would serve as BACT for the 055 West and 055 East Alcohol Quench Processes.

This modification has been completed to permit the construction of the 055 West and 055 East AQPs, and the RTO used to control VOC emissions from the 055 West and 055 East AQPs in order to satisfy the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration). Use of recuperative thermal oxidation will result in a net emissions reduction of 98%; equivalent to a VOC reduction potential of 2575.4 tpy.

Enforcement Issue

- (a) IDEM is aware that the Alcohol Quench Processes have been constructed and operated prior to receipt of the proper permit.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed approval is intended to satisfy the requirements of the construction permit rules. The application submitted to IDEM for this permit is, in part, the result of efforts by IDEM and the source to resolve this issue.

The source has the following enforcement actions pending:

- (1) Violation of 326 IAC 2-5.1-3 (Permits) for the construction and operation of the 055 West and 055 East Alcohol Quench Processes.
- (2) Violation of 326 IAC 2-2 (Prevention of Significant Deterioration) for the construction and operation of the 055 West and 055 East Alcohol Quench Processes.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S-10	Destruction of Alcohol Quench vapors	42	4.17	18,000	450

Recommendation

The staff recommends to the Commissioner that the Part 70 Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on May 15, 2001. Additional information was received on May 29, 2001, July 23, 2001, and March 27, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 and 2).

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

This table reflects the PTE of the modification before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	0.0
PM-10	0.0
SO ₂	0.0
VOC	2628
CO	0.0
NO _x	0.0

HAP	Potential To Emit (tons/year)
Benzene	8.3 x10 ⁻⁵
Dichlorobenzene	4.7 x10 ⁻⁵
Formaldehyde	3.0 x10 ⁻³
Hexane	7.1 x10 ⁻²
Toluene	1.3 x10 ⁻⁴
Lead	2.0 x10 ⁻⁵
Cadmium	4.3 x10 ⁻⁵
Chromium	5.5 x10 ⁻⁵
Manganese	1.5 x10 ⁻⁵
Nickel	8.3 x10 ⁻⁵
Total	7.3 x10 ⁻²

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 Significant Source Modification, pursuant to 326 IAC 2-7-10.5(f)(1), (f)(2), and (f)(4), because the modification's potential to emit VOC is greater than 25 tons per year. This modification is also being performed pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration) because the modification's potential to emit VOC is greater than the 40 ton per year significance threshold for a PSD major source.

County Attainment Status

The source is located in Whitley County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Whitley County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Whitley County has been classified as attainment or unclassifiable for all pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	133
PM-10	133
SO ₂	0.9
VOC	893.5
CO	51
NOx	58

This existing source is a major stationary source because an attainment regulated pollutant (VOC) is emitted at a rate greater than 250 tons per year, and it is not one of the 28 listed source categories.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Alcohol Quench/Mill Emulsion System (055 West)	0.03	0.03	0	52.6 ^(a)	0.31	0.37	Negl.
Alcohol Quench/Mill Emulsion System (055 East)	0.03	0.03	0	52.6 ^(a)	0.31	0.37	Negl.
Two 17,000 gal Mill Emulsion storage tanks	0	0	0	(b)	0	0	0
Two 7,500 gal quench solution storage tanks	0	0	0	(b)	0	0	0
Total Emissions	0.06	0.06	0	105.2	0.62	0.74	Negl.
PSD Significance Level	25	15	40	40	100	40	NA

Negl - Negligible

(a)- The limited VOC PTE for the 055 West and 055 East Alcohol Quench/Mill Emulsion Systems is based on a required minimum 98% overall control efficiency of the BACT recuperative thermal oxidizer controlling VOC emissions from those facilities. See Appendix A for more information.

(b)- Emissions from the storage tanks are accounted for in the emissions from the Alcohol Quench/Mill Emulsion Systems. Note that the limited potential to emit PM, PM-10, CO, NO_x, and HAPs of the modification is slightly greater than the potential to emit before controls. These pollutants are generated by the combustion of natural gas used to fuel the BACT recuperative thermal oxidizer.

This modification to an existing major stationary source is major because the emissions increase is greater than 40 tons per year VOC. Therefore, the modification is subject to the requirements of 326 IAC 2-2.

Federal Rule Applicability

- (a) 40 CFR Part 60, Subpart Kb (Volatile Organic Storage Vessels):
The two (2) 17,000 gallon mill emulsion storage tanks are each subject to 40 CFR Part 60, Subpart Kb because the maximum capacity of each tank is greater than 40 m³ that is used to store volatile organic liquids for which construction, reconstruction, or modification commenced after July 23, 1984. Pursuant to this rule, the permittee must maintain records as required by 40 CFR 60.116(a) and 60.116(b).

The tanks are exempt from the General Provisions (Part 60, Subpart A) and from the provisions of subpart Kb, except as specified in 40 CFR 60.116(a) and 60.116(b), because the tank has a capacity less than 75 m³ storing liquid.

The two (2) 7,500 gallon quench solution tanks are not subject to 40 CFR 60, Subpart Kb because the maximum capacity of the tank is less than 40 m³ that is used to store volatile organic liquids and it was constructed prior to July 23, 1984.

- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.
- (c) The requirements of Section 112(j) of the Clean Air Act (40 CFR Part 63.50 through 63.56) are not applicable to this source because the source does not include one or more units that belong to one or more source categories affected by the Section 112(j) MACT Hammer date of May 15, 2002.
- (d) This source is subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring. In order for this rule to apply, a pollutant-specific-emissions-unit at a source that requires a Part 70 or Part 71 permit must meet three criteria for a given pollutant: 1) the unit is subject to an applicable emission limitation or standard for the applicable regulated air pollutant, 2) the unit uses a control device to achieve compliance with any such emission limitation or standard, and 3) the unit has the potential to emit, of the applicable regulated air pollutant, equal or greater than 100 percent of the amount required for a source to be classified as a major source.

Each Alcohol Quench System and Emulsion System has potential pre-control (but not post-control) VOC emissions that are greater than 100 percent of the amount required for a source to be classified as a major source, are subject to the requirements of 326 IAC 2-2, and 326 IAC 8-1-6 and require the use of a recuperative thermal oxidizer (determined to be BACT) to achieve compliance with the respective limitations. Therefore, each Alcohol Quench Process and Emulsion System is subject to the requirements of 40 CFR Part 64. Pursuant to 40 CFR 64.5(b), the Permittee is required to submit the information required under 40 CFR 64.4 regarding the subject facilities as part of the Part 70 renewal application.

State Rule Applicability - Alcohol Quench Processes (Alcohol Quench and Emulsion Systems)

326 IAC 2-2 (Prevention of Significant Deterioration)

The Essex Group, Inc.- Metal Processing Center is comprised of two rotary furnaces, three copper bar and rod process lines, identified as the 091 line, the 055 West line, and 055 East line, and a PVC mixing process. Each process line consists of a Copper Rod and Bar Production process, made up of a launder/holding furnace/tundish and rotating casting unit, and an accompanying Alcohol Quench Process (AQP), made up of a Quench System and Mill/Emulsion System. The 091 line was constructed in 1975, the 055 West Line in 1985, and the 055 East line in 1994.

On August 30, 1996, the source submitted a permit application for this part 70 permit. A review of the permit application revealed that the Alcohol Quench Processes, as well as ancillary storage tanks, had been constructed and operated without a permit. The application indicated that the potential VOC emissions from each AQP was in excess of 700 tons per year and the source had been a major PSD source for VOC since promulgation of the PSD rules in 1977- the PTE of the 091 AQP, constructed in 1975, was in excess of 700 tons VOC per year.

On August 4, 1998, IDEM sent a letter to the source indicating that Metal Processing Center was found to be in noncompliance with 326 IAC 2-2 because the 055 West and 055 East AQPs triggered a PSD review when they were installed in 1985 and 1994, respectively. In response, Essex Group, Inc., sent a letter to IDEM stating that the VOC emissions from the 055 West and 055 East AQPs were less than 25 tons per year VOC per line; significantly less than original estimate that was included in the original permit application; and consequently are not subject to the requirements of 326 IAC 2-2 or required to receive a registration. The source submitted an amended permit application on May 3, 1999, to reflect this determination.

On March 6, 2001, the source clarified that the VOC emission estimate (>700 tpy VOC) for the AQPs was more accurate than the estimate provided in the letter sent on August 4, 1998.

Consequently, OAQ reaffirmed that the 055 West and 055 East AQPs, identified as P-5 and P-6, triggered a PSD review when they were installed.

The 055 West and 055 East Alcohol Quench Processes are subject to the Prevention of Deterioration (PSD) rules because the VOC emissions are above the PSD significant threshold levels reported in 326 IAC 2-2-1. The PSD provisions require that this major modification be reviewed to ensure compliance with the National Ambient Air Quality Standards and the requirements to apply the Best Available Control Technology (BACT) on the facility emissions.

In order to satisfy the applicable PSD requirements, the source conducted a BACT analysis, pursuant to 326 IAC 2-2-3, and submitted a PSD permit application on May 15, 2001, for a Significant Source Modification to permit the operation of the Alcohol Quench Processes, ancillary storage tanks, and the BACT to control VOC emissions from the 055 West and 055 East facilities and satisfy the requirements of 326 IAC 2-2-3. IDEM determined that the use of a recuperative thermal oxidizer (RTO) would serve as BACT for the 055 West and 055 East Alcohol Quench Processes. Note that the cost per ton of pollutant removed, energy requirements, and environmental impacts were weighed in IDEM's final decision. Control technology summaries of the facilities covered in this major modification are discussed in the *BACT Analysis Report* included in Appendix B.

Note that the two (2) 17,000 gallon mill emulsion storage tanks and two (2) 7,500 gallon quench solution storage tanks are an indivisible part of the 055 East and 055 West Alcohol Quench Systems (P-5 and P-6) and 055 East and 055 West Mill Emulsion Systems (P-5 and P-6). VOC emissions from these tanks have been accounted for in the review of the 055 East and 055 West Alcohol Quench Systems (P-5 and P-6) and 055 East and 055 West Mill Emulsion Systems (P-5 and P-6). The vents on the tanks are equipped with ventilation ducts that provide negative pressure on the vent and route VOC emissions to the RTO.

326 IAC 2-2-4 (Air Quality Analysis)

Pursuant to 326 IAC 2-2-4, a modeling study was performed using the US EPA's Reactive Plume Model (RPM-IV) in order to determine the impact of VOC and NOx emissions from the 055 West and 055 East Alcohol Quench Processes on ambient ozone levels. The study, provided to the OAQ on March 27, 2002, reviewed two emission scenarios: 1) the impact of uncontrolled VOC emissions, and 2) the impact of controlled VOC emissions with the use of the RTO. The difference in the RPM-IV modeled ozone concentrations between the ambient mode and plume-injected mode varied from -0.1 to 1.0 ppb for both the uncontrolled and controlled scenarios. As a result, IDEM, OAQ has determined that the emissions from the 055 West and 055 East Alcohol Quench Processes do not have a significant impact on ambient ozone formation since the impact from the controlled and uncontrolled source plumes are less than 3 parts per billion (ppb) ozone. See Appendix C for more information.

326 IAC 2-2-6 (Increment Consumption)

Pursuant to 326 IAC 2-2-6(a), demonstration of increment consumption is not required for a PSD major source of VOC emissions.

326 IAC 2-2-5 (Air Quality Impact) and 326 IAC 2-2-7 (Additional Analyses)

Pursuant to 326 IAC 2-2-5(b)(1) and 326 IAC 2-2-7(a)(2), demonstration of adherence to air quality standards is not required because the net VOC emissions increase does not impact an area where an applicable increment is known to be violated or temporary; no ozone increment exists and the controlled emissions from the modification is less than the respective PSD significant emission rate. In addition, an Air Quality Impact analysis and additional analyses, required per 326 IAC 2-2-5 and 2-2-7, have already been performed by Steel Dynamics, Inc. (SDI) for their Coesse Mill which was provided in their PSD application and has been recently approved by IDEM and the US EPA. SDI is situated in virtually the same location as the Columbia City facility, located on the downwind side. After BACT is operational, the maximum controlled VOC emissions from Essex Group's subject units will be less than the VOC input used in SDI's model. SDI's analysis demonstrated that emissions from their modification will not result

in ground-level ozone concentrations which exceed the significant impact threshold of 3 ppb (parts per billion). As a result, no air quality impact or additional analyses pursuant to 326 IAC 2-2-5 and 2-2-7 are required.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This modification has a potential to emit hazardous air pollutants (HAPs) less than ten (10) tons per year of a single HAP and less than twenty-five (25) tons per year of any combination of HAPs. Therefore, the modification is not subject to the requirements of 326 IAC 2-4.1.

326 IAC 8-1-6 (Volatile Organic Compounds: Best Available Control Technology)

The 055 West and 055 East Alcohol Quench Processes (Quench and Emulsion Systems) were constructed after January 1, 1980 and have a potential to emit greater than 25 tons VOC per year. Therefore, pursuant to 326 IAC 8-1-6, the systems must reduce VOC emissions using the Best Available Control Technology (BACT). This requirement will be satisfied by compliance with 326 IAC 2-2-3. IDEM has determined that BACT for these systems is recuperative thermal oxidation with a minimum overall efficiency of 98%. See Appendix B for more information.

326 IAC 8-6 (Organic Solvent Emission Limitations)

The 055 West Line and 055 East Line Mill Emulsion/Alcohol Quench Systems (P-5 and P-6) were constructed after January 1, 1980. Therefore, pursuant to 326 IAC 8-6-1, the requirements of 326 IAC 8-6 are not applicable to the 055 West Line and 055 East Line Mill Emulsion/Alcohol Quench System.

Testing Requirements

At the direction of IDEM's Office of Enforcement, the Permittee conducted VOC testing on the recuperative thermal oxidizer on January 25, 2002.

Between January 1, 2004 and July 31, 2004 (approximately 2.5 years after the testing completed on January 25, 2002), the Permittee shall conduct a performance test on the recuperative thermal oxidizer to document compliance with the minimum 98% destruction efficiency determined to be BACT for this operation. This test shall be repeated at least once every two and one half (2.5) years from the date of the most recent valid compliance demonstration.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The following compliance monitoring requirements apply to the recuperative thermal oxidizer:

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring the operating temperature of the recuperative thermal oxidizer. For the purposes of this requirement, continuous monitoring shall mean no less often than once per minute. The output of this system shall be recorded as an hourly average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the hourly average temperature of 1456EF. The Permittee shall determine the minimum hourly average temperature from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.1 of the permit. The Permittee shall operate the thermal oxidizer at or above the minimum hourly average temperature as observed during the compliant stack test.
- (b) The Permittee shall determine the appropriate fan amperage from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.1 as approved by IDEM. The Permittee shall observe the fan amperage at least once per day when the thermal oxidizer is in operation. The oxidizer fan amperage shall be maintained within the normal range of 206 to 213 amps or as established in the most recent compliant stack test.

These monitoring conditions are necessary because the recuperative thermal oxidizer must be in operation at all times to ensure compliance with 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 8-1-6 (Best Available Control Technology).

Conclusion

The construction and operation of this proposed modification shall be subject to the conditions of the attached Part 70 Significant Source Modification No. 183-14400-00016.

**Appendix A: Copper Rod and Bar Production
Alcohol Quenching and Mill Emulsion Process**

Page 1 of 2 TSD App A

**Company Name: Essex Group, Inc - Metal Processing Center
Address City IN Zip: 2601 South 600 East, Columbia City 46725
Permit #: 183-14400-00016
Reviewer: ERG/BS
Date: August 10, 2002**

**Alcohol Quenching and Mill Emulsion
055 East Line**

TYPE OF MATERIAL	Maximum operating hours			Control Efficiency**		
2-PROPANOL	8760			98.0%		
	PM lbs/hr	PM10 lbs/hr	SOx lbs/hr	NOx lbs/hr	VOC * lbs/hr	CO lbs/hr
	-	-	-	-	300	-
Potential Emissions (lbs/hr)	0.0	0.0	0.0	0.0	300.00	0.0
Potential Emissions (tons/year)	0.00	0.00	0.00	0.00	1314.00	0.00
Controlled Emissions (tons/year)	0.00	0.00	0.00	0.00	26.28	0.00

**Alcohol Quenching and Mill Emulsion
055 West Line**

TYPE OF MATERIAL	Maximum operating hours			Control Efficiency**		
2-PROPANOL	8760			98.0%		
	PM lbs/hr	PM10 lbs/hr	SOx lbs/hr	NOx lbs/hr	VOC * lbs/hr	CO lbs/hr
	-	-	-	-	300	-
Potential Emissions (lbs/hr)	0.0	0.0	0.0	0.0	300.00	0.0
Potential Emissions (tons/year)	0.00	0.00	0.00	0.00	1314.00	0.00
Controlled Emissions (tons/year)	0.00	0.00	0.00	0.00	26.28	0.00

**Alcohol Quenching and Mill Emulsion
091 Line**

TYPE OF MATERIAL	Maximum operating hours			Control Efficiency**		
2-PROPANOL	8760			0.0%		
	PM lbs/hr	PM10 lbs/hr	SOx lbs/hr	NOx lbs/hr	VOC * lbs/hr	CO lbs/hr
	-	-	-	-	300	-
Potential Emissions (lbs/hr)	0.0	0.0	0.0	0.0	300.00	0.0
Potential Emissions (tons/year)	0.00	0.00	0.00	0.00	1314.00	0.00
Controlled Emissions (tons/year)	0.00	0.00	0.00	0.00	1314.00	0.00
TOTAL EMISSIONS (after controls in tons/year)	0.00	0.00	0.00	0.00	1366.56	0.00

* Emission factor provided by source based on mass balance calculations.

** The 055 East and 055 West Quench Lines are controlled by a recuperative thermal oxidizer with a minimum control efficiency of 98%. Emissions from the storage tanks have been accounted for in the emissions from the alcohol quenching and emulsion.

METHODOLOGY

Potential Emissions (tpy) = VOC throughput (lb/hr) x 8760 (hr/yr) x 1/2000 (ton/lb)

Controlled Emissions (tpy) = Potential Emissions (tpy) x (1- Control Efficiency (%)/100)

**Appendix A: Emissions Calculations
Recuperative Thermal Oxider**

Page 2 of 2 TSD App A

Company Name: Essex Group, Inc., Metal Processing Center
Address City IN Zip: 2601 South 600 East, Columbia City, IN 46725
SSMod #: 183-14400-00016
Reviewer: ERG/BS
Date: August 10, 2002

Potential VOC Removal (tpy)	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr				
2496.6	9.0	78.8				
Pollutant						
Emission Factor in lb/ton of VOC removed*	PM/PM10 0.068	SO2 0.005	NOx 0.892	VOC NA	CO 0.749	HAP 0.0168
Potential Emission in tons/yr	0.08	0.01	1.11	0.00	0.93	0.02

* Emission factors taken from the completed BACT analysis submitted with the application.

No VOC emissions result from the Recuperative Thermal Oxidizers as they are used for VOC control.

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	8.278E-05	4.730E-05	2.957E-03	7.096E-02	1.340E-04

HAPs - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.971E-05	4.336E-05	5.519E-05	1.498E-05	8.278E-05

Methodology

Potential Emissions from VOC destruction and gas usage (tons/yr) = Potential VOC Removal (ton VOC/yr) x Emission Factor (lb/ton VOC removed) x 1/2,000 ton/lb

Potential HAP Emissions from gas combustion (tons/yr) = Potential gas throughput (MMcf/yr) x Emission Factor (lb/MMcf) x 1/2,000 ton/lb

Appendix B

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION

Source Background and Description

Source Name:	Essex Group, Inc.- Metal Processing Center
Source Location:	2601 South 600 East, Columbia City, IN 46725
County:	Whitley
SIC Code:	3351 and 3357
Operation Permit No.:	T183-6488-00016
Operation Permit Issuance Date:	not yet issued
Significant Source Modification No.:	183-14400-00016
Permit Reviewer:	ERG/BS

BACT Analysis

The Indiana Department of Environmental Management (IDEM) has performed the following federal BACT review for the 055 West and 055 East Alcohol Quench Processes owned and operated by Essex Group, Inc.- Metal Processing Center, located in Columbia City, Indiana. This review was performed for the Alcohol Quench Processes at a maximum copper quenching rate of 20 tons of copper per hour and 300 pounds 2-Propanol per hour per process. The 055 West and 055 East Alcohol Quench Processes consists of the following processes/equipment:

055 West Alcohol Quench Process

- (a) One (1) Mill Emulsion System, identified as 055 West Line Mill Emulsion System (P-5), constructed in 1985, a maximum capacity of 300 pounds 2-Propanol (IPA) per hour, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.
- (b) One (1) Alcohol Quench System, identified as 055 West Line Quench System (P-5), constructed in 1985, a maximum capacity of 300 pounds 2-Propanol (IPA) per hour, which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-6 and stack S-10.

055 East Alcohol Quench Process

- (c) One (1) Mill Emulsion System, identified as 055 East Line Mill Emulsion System (P-6), constructed in 1994, a maximum capacity of 300 pounds 2-Propanol (IPA) per hour, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume IPA through sprays in an enclosed rolling mill stand area, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.
- (d) One (1) Alcohol Quench System, identified as 055 East Line Quench System (P-6), constructed in 1994, a maximum capacity of 300 pounds 2-Propanol (IPA) per hour, which pumps a quench solution containing 0.8% - 3.0% by volume IPA through ejectors into tubes, emissions controlled by a recuperative thermal oxidizer, identified as CE-03, exhausting to vent V-7 and stack S-10.

The source is located in Whitley County which is designated as attainment or unclassifiable for all criteria pollutants. Based upon the emission calculations, the modification exceeds the PSD significant threshold levels stated in 326 IAC 2-2-1 for VOC. Therefore, VOC was reviewed pursuant to the PSD Program (326 IAC 2-2). The PSD Program requires a BACT review and air quality modeling. BACT is an emission limitation based on the maximum degree of reduction of each pollutant subject to the PSD

requirements. IDEM conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below.

- (1) Identify all potentially available control options;
- (2) Eliminate technically infeasible control options;
- (3) Rank remaining control technologies by control effectiveness;
- (4) Evaluate the most effective controls and document the results; and
- (5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution thereby protecting public health and the environment.

The following BACT determinations are based on the following information:

- (1) The PSD permit application submitted by Essex Group, Inc. - Columbia City on May 15, 2001;
- (2) Information from vendors/suppliers; and
- (3) The EPA RACT/BACT/LAER (RBLC) Clearinghouse.

VOC BACT

The VOC emissions generated from the Alcohol Quench Processes are from the evaporation of 2-propanol used in the mill emulsion and quenching systems. The mill emulsion system: 1) cools the hot copper rod as it goes through the mill stands; 2) cools and lubricates the rolls used to move the copper rod; 3) provides a reducing atmosphere to prevent the formation of oxides on the copper; and 4) reduce the copper oxides that are formed on the bar back to copper by a chemical reaction between isopropyl alcohol and the copper oxides. The quench system cools the rod so that it exits the system at a temperature less than 100°F, and reduces copper oxides that are formed on the bar back to copper by a chemical reaction between isopropyl alcohol and the copper oxides. Since the two quench processes are identical and vented to the same stack, both processes have been reviewed together.

Step 1 - Identify Control Options

Control Options Evaluated - The following available technologies were evaluated to control VOC emissions from the Alcohol Quench Processes. IDEM searched EPA's RACT/BACT/LAER Clearinghouse (RBLC) and the source surveyed respective control technology vendors to identify quench systems and sources with emissions similar to the Alcohol Quench Processes at Essex Group, Inc. - Metal Processing Center. The search identified the following:

SIC Code	Source Name	RBLC ID	Process	BACT	Efficiency
3842	Flowmatrix	CA-0857	Oven curing	Recuperative Thermal Oxidation	98%

SIC Code	Source Name	RBLC ID	Process	BACT	Efficiency
NA	vendor: MEGTEC	NA	NA	Recuperative Thermal Oxidation	95%
NA	vendor: BJ Associates	NA	NA	Straight Thermal Oxidation	95%
2821	W.R. Grace & Co. Formpac division	IN-0074	polystyrene foam manufacturing	Recuperative Thermal Oxidation	90%
NA	vendor: Edwards Engineering Corp.	NA	NA	IPA Vapor Recovery System: Refrigerated Condensation	85%
NA	Cyprus Rod Chicago	NA	Copper Rod Drawing and Rolling	Polyad Resin Adsorption System	81%
NA	Southwire Inc. - Copper Division	NA	Copper Rod Mill	In-situ Incineration	74%

NA- Not applicable. The control technologies marked with a 'NA' were provided by control technology vendors and were not listed in the RBLC.

Step 2 - Eliminate technically infeasible control options

Based on the results from the RBLC database search, vendor review, and an evaluation of the control technologies, IDEM determined that the IPA Vapor Recovery System/Refrigerated Condensation, Polyad Resin Adsorption System, and In-Situ Incineration were technically infeasible for the following reasons.

- (1) **The IPA Vapor Recovery System, Refrigerated Condensation:**
This control technology would chill the gas stream to below the solvent condensation point and remove the solvents from the air. These systems work best in dry gas streams with high solvent concentrations. Under ideal conditions a refrigerated condenser based solvent recovery system would provide 85% control of emissions from the rod mill gas stream and provide a solvent return to the facility.

Variability in loading and high water content in the gas stream could cause icing problems in the condenser and result in less efficient control of VOC emissions. These problems would be exacerbated by any future pollution prevention measures to reduce alcohol consumption in the manufacturing process because a reduction in alcohol content in the gas stream makes the condenser more prone to icing and consequently less efficient. In addition to icing problems, the recovered alcohol would require a separate blending and metering system to reintroduce it to the rod mill process.
- (2) **Polyad Resin Adsorption System:**
This system is similar to a carbon absorption system but uses a resin medium in lieu of a carbon medium. The material is circulated in the exhaust stream and then transferred to a steam desorption unit. VOCs are extracted from the medium and then transferred to a condensing unit where the gases are recovered and then returned to the rod mill process. Since its introduction at the Cyprus Rod facility, this system has required numerous add-on pre-treatment devices to prevent contamination of active sites and has proven prohibitively difficult and expensive to maintain, without providing the best control efficiency. As with the condenser recovery system, this system would require additional metering and blending technologies to reintroduce the recovered solvent into the rod mill.
- (3) **In-Situ Incineration:**
The in-situ incineration system at the Southwire facility ducts VOC laden air to a nearby furnace. The furnace maintains sufficient burner capacity use the gas stream as primary and secondary combustion air. The gas stream is incinerated in the furnace or "in-situ" at an overall efficiency of 74%. The Columbia City Essex plant has neither sufficient

burner capacity nor an appropriate furnace for combustion of waste gases. Installation of additional burners in the existing furnaces is not acceptable as the induction of moisture and VOC laden air would negatively affect product quality, without providing the best control efficiency.

Step 3 - Rank remaining control technologies by control effectiveness

Two remaining technically feasible approaches for controlling VOC emissions from facilities that have a VOC PTE comparable in magnitude as the Alcohol Quench Processes located at the Columbia City source:

- (1) Recuperative Thermal Oxidization, 98% efficient;
- (2) Recuperative Thermal Oxidization, 95% efficient; and
- (3) Straight Thermal Oxidization, 95% efficient.

Step 4 - Evaluate the most effective controls and document results

On January 25, 2002, the source completed stack testing on the recuperative thermal oxidizer used to control emissions from the Alcohol Quench Processes. Stack test results indicate that an overall efficiency of at least 98% (100% capture, 98% destruction) can be achieved (99.8% was demonstrated through stack testing at the Essex Columbia City facility). Note that a 98% overall efficiency has also been achieved by another source listed in the RBLC (Flowmatrix; RBLC ID CA-0857).

Recuperative Thermal Oxidation is the most cost effective control method, offers the highest, technically feasible overall efficiency reviewed, and has demonstrated excellent longevity in the field. The cost effectiveness of this technology is estimated to be \$264.02 per ton of VOC removed compared to \$413.35 per ton of VOC removed for Straight Thermal Oxidation. Recuperative Thermal Oxidization also consumes 76% less energy (in the form of natural gas) and emits approximately 80% less criteria and toxic pollutants than Straight Thermal Oxidization. Use of recuperative thermal oxidation will result in a potential VOC emission reduction of 2575.4 tons per year based on an overall control efficiency of 98% (100% capture and 98% destruction) when operating at a maximum rate of 300 pounds of 2-Propanol per hour per system.

Step 5 - Select BACT

Based on the considerations mentioned above, IDEM has determined that BACT for Essex Group, Inc. - Metal Processing Center's 055 West and 055 East Alcohol Quench Processes, identified as P-5 and P-6, will be Recuperative Thermal Oxidization operating at a minimum 98% overall control efficiency (100% capture and 98% destruction) and the VOC (2-Propanol) input that shall not exceed 300 pounds per hour per system.

Appendix C

AIR QUALITY ANALYSIS

Source Background and Description

Source Name:	Essex Group, Inc.- Metal Processing Center
Source Location:	2601 South 600 East, Columbia City, IN 46725
County:	Whitley
SIC Code:	3351 and 3357
Operation Permit No.:	T183-6488-00016
Operation Permit Issuance Date:	not yet issued
Significant Source Modification No.:	183-14400-00016
Permit Reviewer:	ERG/BS

Essex Group ("Essex") has applied to permit the operation of the 055 West and 055 East Alcohol Quench Processes, and a recuperative thermal oxidizer, at their existing plant in Columbia City, Whitley County, Indiana. Whitley County is designated as attainment for all of the National Ambient Air Quality Standards.

The VOC emissions generated from the 055 West and 055 East Alcohol Quench Processes are from the evaporation of 2-propanol used to in the mill emulsion and quenching systems. The mill emulsion system: 1) cools the hot copper rod as it goes through the mill stands; 2) cools and lubricates the rolls used to move the copper rod; 3) provides a reducing atmosphere to prevent the formation of oxides on the copper; and 4) reduce the copper oxides that are formed on the bar back to copper by a chemical reaction between isopropyl alcohol and the copper oxides. The quench system cools the rod so that it exits the system at a temperature less than 100°F, and reduce copper oxides that are formed on the bar back to copper by a chemical reaction between isopropyl alcohol and the copper oxides.

NOx emissions generated from the 055 West and 055 East Alcohol Quench Processes are from the combustion of natural gas in the recuperative thermal oxidizer that will be used to control emissions from the 055 West and 055 East Alcohol Quench Processes.

Introduction

As indicated in Appendix B, BACT was determined to be the use of a recuperative thermal oxidizer (RTO) operating with a minimum 98% overall control efficiency (100% capture and 98% destruction) and a maximum VOC input rate of 300 pounds per hour IPA (2-Propanol).

Pursuant to 326 IAC 2-2, a modeling study was performed using the US EPA's Reactive Plume Model (RPM-IV) in order to determine the impact of VOC and NOx emissions from the 055 West and 055 East Alcohol Quench Processes on ambient ozone levels. The study, provided to the OAQ on March 27, 2002, reviewed two emission scenarios: 1) the impact of uncontrolled VOC emissions, and 2) the impact of controlled VOC emissions with the use of the RTO.

Air Quality Analysis

The OAQ reviewed the air quality impact analysis, consisting of dispersion modeling, portion of the permit application to accomplish the following objectives:

- A. Determine the ambient air concentrations of the source's emissions.
- B. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS).

The National Ambient Air Quality Standard for ozone is currently 120 parts per billion (ppb) for one-hour and eight-hour averages. According to IDEM policy, the significant impact threshold is 3 ppb ozone. This represents the typical minimum detection limit for an ambient ozone monitor.

Note that there was no impact review conducted for the nearest Class I area, which is Mammoth Cave National Park in Kentucky, due to its large distance from the source.

Note that pursuant to 326 IAC 2-2-6(a), demonstration of increment consumption is not required for a PSD major source of VOC emissions.

Model Description

The US EPA RPM-IV model is a numerical plume model that simulates the interaction of plume dispersion and photochemistry. The model employs the Carbon Bond Mechanism IV, dated March 1991, which is a chemical kinetics mechanism that has been widely used for the simulation of atmospheric chemistry. This mechanism contains 14 chemical species and 95 chemical reactions.

The RPM-IV model is normally run in two modes. The first mode (i.e. ambient mode) is used with initial ambient chemical species concentrations and meteorological conditions that are conducive to a high ambient ozone episode. After the ambient mode is run, the model is run again (plume-injected mode) with the source's VOC and NO_x emissions on the ambient ozone concentrations. The difference between the plume-injected mode and the ambient mode are calculated on an hourly basis to determine the impact of the emission source.

Meteorological Data

The meteorological data used in the RPM-IV model was based on ambient concentrations from aircraft measurements over northern Indiana provided by the Lake Michigan Air Directors Consortium for June 25, 1991. Note that wind speed, atmospheric stability class and temperature data are from Fort Wayne National Weather Service station merged with the mixing heights from the Dayton, Ohio upper air station.

Model Input

The following source emission data was used as input for the RPM-IV model. Note that: 1) NO_x emissions will only be present from the use of the recuperative thermal oxidizer, and 2) The VOC (2-propanol) input rate is equivalent to 600 pounds per hour; equivalent to 300 pounds per hour per quench process/system.

Parameter	Scenario 1 (uncontrolled)	Scenario 2 (controlled with RTO)
Duct/stack Diameter (meters)	0.845	1.26
Exhaust Height Above Ground (meters)	6.7	12.4
Exhaust Gas Velocity (m/sec)	10.0	15.0
Exhaust Gas Temperature (K)	307.0	466.0
Ambient Temperature (K)	308.0	308.0
2-Propanol Emission rate (gram/sec)	75.6	0.114
NO _x Emission rate, as NO ₂ (gram/sec)	none	0.095

Model Results

The difference in the RPM-IV modeled ozone concentrations between the ambient mode and plume-injected mode varied from -0.1 to 1.0 ppb for both the uncontrolled and controlled scenarios.

Conclusion

Results from the study conclude that the emissions from the 055 West and 055 East Alcohol Quench Processes do not have a significant impact on ambient ozone formation since the impact from the controlled and uncontrolled source plumes are less than 3 parts per billion (ppb) ozone.